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1. PURPOSE

This procedure covers the removal and installation of the U shape lead shield blocks weighing 409 pounds on the SDL beam line.

2. REFERENCES

2.1 ES&H 1.5.1 Lockout/Tagout Requirements

2.2 Lifting Safety SBMS

2.3 DOE-STD-1090-2001 Hoisting and Rigging

2.4 Drawing No. SDL-505.02-002 Source Development Lab Linac Shielding Lead Casting

3. PRE-REQUISITIES

3.1 The beam line shall be shut down and LOTO applied prior to starting this lift.

3.2 Barricades shall be erected to prevent un-authorized personnel from entering the area.

3.3 All personnel shall wear proper Personnel Protective Equipment (Hard Hat, Safety Shoes, Gloves).

3.4 All local hazards shall be located and identified.

3.5 A Critical Lift Review Form shall be submitted to and approved by the BNL Lifting Safety Committee.

3.6 No work shall be performed on the shield blocks while suspended from the crane.

3.7 A minimum of two (2) people, Crane Operator and Signal Person, shall be present to complete this procedure.

3.8 All personnel, authorized to be in the area, shall know and be capable of demonstrating the Emergency Stop Signal.

4. ROLES AND RESPONSIBILITIES

4.1 A Person(s) In Charge (PIC) shall be designated by the NSLS. PICS shall be qualified as per Lifting Safety SBMS. A PIC shall be present during any lift. The PIC shall not be the Crane Operator.

4.2 One person shall be designated as the Crane Operator. This person shall be trained and qualified as a Crane Operator as per the current Material Handling requirements of the BNL Training Group.

4.3 One person shall be designated as the signal person. This person shall be trained and qualified as a Crane Operator as per the current Material Handling requirements of the BNL Training Group.

NOTE: THE CRANE OPERATOR SHALL OBEY A STOP SIGNAL FROM ANY PERSON.

5. EQUIPMENT

Only the following equipment shall be used for each lift. (Rigging equipment use for pre-engineered lifts SHALL be designated for and NOT replaced or changed during the life of the approved pre-engineered lift).

5.1 SDL Overhead Crane 729-CRNE001 (2 ton capacity)

5.2 2 each, ¾ Inch Shouldered eyebolts (Vertical WLL: 5,200#)

5.3 2 each 2 ton screw pin anchor shackles (minimum)

5.4 2 each, 1 inch, one ply 3 foot long synthetic web with hooks (WLL 4,300 lbs. @ 45)

6. INSPECTIONS

6.1 The crane shall have a current annual inspection as per the Lifting Safety SBMS.

6.2 All slings shall have a current annual inspection as per the Lifting Safety SBMS.

6.3 A daily Overhead Crane/Hoist Inspection Checklist shall be completed at the beginning of each shift.

6.4 All rigging (eyebolts, shackles, slings etc.) shall be inspected for signs of wear at the beginning of each shift.

6.5 All threaded lifting holes shall be inspected for clean and proper threads.

7. PROCEDURE

CAUTION: The area over the beam line has many obstructions. Use extreme caution when working in this area.

7.1 The following steps shall be followed for the removal of each shield block from the Beam Line.

7.1.1 Remove all restraints from shielding.

7.1.2 Position the overhead crane hook over the shield block that is to be removed.

7.1.3 Install the slings onto the crane hook making sure that hook mouse seats properly.

7.1.4 Install the eyebolts into the shield block. Use shim washers under the shoulder in order to ensure that the slings will pull in the same plans as the eye.

CAUTION: Improper shimming of the eyebolt shoulder can cause excessive shear and failure.

7.1.5 Using shackles connect the slings to the eyebolts in the shield block.

7.1.6 Take up the slack in the rigging. Check all of the rigging for proper alignment. Lower the load and adjust if necessary.

7.1.7 Lift the shield block high enough to clear the beam line.

7.1.8 Move the shield block south and lower onto the floor.

7.1.9 Disconnect the rigging from the shield block.

7.1.10 Repeat steps 7.1.1 thru 7.1.8 for each shield block to be removed.

7.2 The following steps shall be followed for the installation of each shield block onto the beam line.

7.2.1 Position the crane above the shield block to be lifted onto beam line.

7.2.2 Install the slings onto the crane hook making sure the hook mouse seats properly.

7.2.3 Install the eyebolts into the shield block. Use shim washers under the shoulder in order to ensure that the slings will pull in the same plane as the eye.

CAUTION: Improper shimming of the eyebolt shoulder can cause excessive shear and failure.

7.2.4 Using shackles connect the slings to the eyebolts in the shield block.

7.2.5 Take up the slack in the rigging. Check all of the rigging for proper alignment. Lower the load and adjust if necessary.

7.2.6 Lift the shield block up and into position on the beam line.

7.2.7 Disconnect the rigging from the shield block.

7.2.8 Repeat steps 7.2.1 thru 7.2.7 for each shield block to be installed.

7.3 Inspect all rigging and return to its storage locker.

7.4 Return the crane to its normal storage position.

NSLS REVISION & PERIODIC REVIEW LOG

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Subject:	SDL-PRE-ENGINEERED LIFT PROCEDURE: LEAD SHIELD BLOCKS WEIGHING 409 POUNDS

> See NSLS Quality Control Coordinator for original revision and review signatures <

REVISION TABLE

Rev	Description	Date
1	Initial Document	1/21/05
2	Reference Items Update	2/22/05

PERIODIC REVIEW TABLE

Complete this table to record the completion of periodic reviews for an existing controlled document. A successful periodic review will reveal the existing document is current, correct, and does not require any revision/change.

Document Review Frequency
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Rev	Date	Reviewed By (Print):	Signature: